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Title: Does fathers' and mothers' rumination predict emotional symptoms in their children?

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Abstract

Objectives Although rumination can have a negative influence on the family environment and the quality of parent-child interactions, there is little research on the role of parental rumination in predicting adverse child outcomes over time. This longitudinal study examined whether mothers' and fathers' brooding rumination would each uniquely predict emotional symptoms in preschool children.

Methods The initial sample consisted of 160 families (including 50 mothers with past depression, 33 fathers with past depression and 7 fathers with current depression according to the Structural Clinical Interview for DSM-IV). Families were seen at two times separated by 16 months. Children's mean age at the entry into the study was 3.9 years (*SD* = 0.8). Each parent independently completed the Ruminative Response Scale, the Child Behavior Checklist, the Patient Health Questionnaire and the Dyadic Adjustment Scale.

Results Fathers' brooding rumination significantly predicted children's emotional symptoms over 16 months when controlling for child emotional symptoms, couple adjustment, parents' depressive symptoms, mothers' brooding and reflective rumination and fathers' reflective rumination at baseline. Unexpectedly, mothers' brooding rumination did not significantly predict child emotional symptoms over time. Correlational analyses showed significant associations between parents' rumination and lower levels of couple adjustment.

Conclusions Findings suggest that fathers' brooding rumination may play a unique role in their children's emotional outcomes. If these findings are replicated, studies should examine the processes by which these links occur and their implications for clinical interventions.

Keywords: Depression, fathers, rumination, couple relationship, internalising

Practitioner points

- Rumination is prevalent among individuals with depression but to date no studies have examined the possible role of mothers' and fathers' brooding rumination in predicting children's emotional symptoms.
- Fathers' brooding rumination was positively associated with children's emotional symptoms over time when controlling for mothers' rumination and other important characteristics.
- Parental rumination might be a promising target for both prevention and intervention strategies for parents with depression and their children.
- The findings of this study could inform parenting interventions (e.g., educate parents about the possible effects of rumination on family interactions and children's outcomes, help parents notice when they ruminate, teach them to replace rumination with more adaptive strategies).
- The findings should be interpreted with caution. The study relied on self-reports and therefore the data are subject to shared method variance which may have artificially inflated associations between parent and child outcomes.
- The sample consisted of well-educated parents and therefore the findings should be generalised to other populations with caution.

Introduction

Mood disorder symptoms (e.g., distress, depression, anxiety, worry) tend to develop early in a child's life and show stability over time. Briggs-Gowan, Carter, Bosson-Heenan, Guyer, and Horwitz (2006) found a 38% persistence rate of emotional symptoms in 1082 infants and toddlers between the ages of 12-40 and 23-48 months old. It is well-established that depression in mothers and fathers predicts children's emotional difficulties (Essex, Klein, Cho, & Kraemer, 2003; Ramchandani, Stein, Evans, & O'Connor, 2005). Among other family processes (e.g., impaired parenting), interparental conflict is common in couples in which at least one partner has depression (Rehman, Gollan, & Mortimer, 2008) and significantly predicts child emotional symptoms (Brock & Kochanska, 2016). There may be additional factors associated with parental depression that contribute to or mediate the increased risk of emotional symptoms in children. Parental rumination is one particularly salient factor.

Rumination is a response style to sad and depressed mood that involves a repetitive focus on these feelings and on their causes, meanings and implications in the absence of active problem solving attempts (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). There are two specific subtypes of rumination: brooding rumination (henceforth 'brooding'), a more maladaptive, self-critical component that involves comparisons between current state and an unachieved standard, and reflective pondering (henceforth 'reflection', a less maladaptive, emotionally neutral component that involves turning inward to analyse negative mood and problems (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Experimental and longitudinal studies have found that rumination plays a key role in the onset and course of depression in adults (see Nolen-Hoeksema *et al.* 2008; Watkins, 2008), although only the brooding subscale, and not the reflection subscale, predicts increased depressive symptoms over time (Treynor *et al*. 2003; Nolen-Hoeksema *et al.* 2008).

In mothers, brooding (but not reflection) during the antenatal period has been found to predict increases in depressive symptoms postnatally (Barnum, Woody, & Gibb, 2013). Apart from the negative association between rumination and parental mental health, DeJong, Fox and Stein (2016) suggested that rumination can affect a mother's responsiveness to her infant due to reduced cognitive control and cognitive

biases. Indeed, studies have found that maternal rumination is associated with reduced maternal responsiveness (Stein *et al.* 2012; Stein, Lehtonen, Harvey, Nicol-Harper, & Craske, 2009) and sensitivity (Tester-Jones, Karl, Watkins, & O'Mahen, 2016) during mother-infant interactions.

Rumination can also affect infant outcomes (e.g., attention, learning, emotion regulation) given their dependence on sensitive and responsive parenting (DeJong *et al.* 2016; NICHD, 1999; Stein *et al.* 2009). It is likely therefore that parental rumination adversely influence infants' outcomes concurrently and might set them on negative developmental trajectories in the future. DeJong *et al.* (2016) suggest that the risks rumination exerts on children's and mother-child interactions can operate for fathers as well. However, it remains unclear whether mothers' and fathers' trait rumination are independently associated with emotional symptoms among their children (rather than both reflecting a shared genetic diathesis) and if so, whether parent's gender might be an important factor to consider.

Rumination is significantly associated with greater communality (an emotional orientation characterised by concern and warmth) and negatively associated with agency (an instrumental orientation characterised by determination and forcefulness; Conway, Alfonsi, Pushkar, & Giannopoulos, 2008). Whilst there have been major changes in gender roles in past decades, agency and communality are stereotypically viewed as male and female characteristics respectively (e.g., Abele, 2003; Conway *et al.*, 2008). Fathers typically adopt a more agentic role. Paquette (2004) suggested that fathers are inclined to present their children with more challenging and problem solving situations and subsequently to prepare their children to enter into new situations with confidence and assertiveness. It is plausible that a ruminating father who does not act in a gender-typical way may have a particular influence on child emotional outcomes because agentic traits are not modelled. Of course these speculations are tentative and, to date, no studies have examined the role of fathers' rumination in predicting adverse child outcomes. Fivush, Marin, McWilliams, and Bohanek (2009) examined how fathers discussed past family events with their 9-12 year old children and found that fathers' use of elaborations, evaluations and repetitions about emotional features of negative events was associated with increased emotional and behavioural problems in their children. A similar but weaker association occurred when fathers discussed factual information relating to negative events. The influence

of fathers' brooding may be additive beyond the influence of mothers' brooding due to the special role of the father in the context of the family unit.

Based on the theoretical model developed by DeJong and colleagues (2016), we extended previous research by examining the predictive role of mothers' and fathers' brooding in child emotional symptoms. On the basis of previous research suggesting that brooding but not reflection has maladaptive consequences over time (Burwell & Shirk, 2007; Treynor *et al.* 2003), we included both of these ruminative subscales expecting that only brooding would be uniquely associated with negative child outcomes. We hypothesised that mothers' brooding would predict child emotional symptoms over a 16 month interval, controlling for baseline child emotional symptoms, couple adjustment, and mothers' depressive symptoms and reflection. Because the contribution of fathers to their children's outcomes beyond the contribution of mothers remains unknown, we tested whether mothers' and fathers' brooding independently contributed to child emotional symptoms. We controlled for baseline child emotional symptoms because, as discussed earlier, some studies show persistence of emotional symptoms over time (e.g., Briggs-Gowan *et al.* 2006) and because we were interested to test whether brooding rumination predicted additional variance in child emotional symptoms at Time 2. We also controlled for couple relationship quality given its links with both parental depression and children's outcomes (Brock & Kochanska, 2016; Rehman *et al.* 2008). We hypothesised that fathers' self-reported brooding would independently predict higher levels of child emotional symptoms over time, even after controlling mothers' brooding and reflection, fathers' reflection, parents' depressive symptoms, couple adjustment, and child emotional symptoms at baseline.

Methods

Design

Participants and Procedure

Participants were 160 families who took part in the Fathers in Focus study, a longitudinal study that examined links between parental depression and child outcomes. We recruited fathers through advertisements in nurseries, community locations that fathers of young children were likely to visit, and by

screening general practice records. Parents were required to be biological parents and have regular contact with the study child, speak English, and to allow home visits. The child had to be 3-5 years of age. If parents had more than one child aged between 3 and 5, the younger child was recruited. Participants were excluded if children had medical and neurological disorders, or language and cognitive delays. Mothers were also invited to take part although their participation was not necessary. All research procedures were approved by relevant National Health Service Ethics Committees (REC reference number: 11/H0102/6).

A trained researcher saw the families at two separate time points with over one year between the assessments (M = 16.2 months, SD = 3.7). At Time 1, the sample consisted of 160 fathers and 146 mothers. Twenty five percent of fathers (n = 40) and 34% of mothers (n = 50) had ever experienced depression (Major Depressive Episode) according to the Structural Clinical Interview for DSM-IV (SCID; Gorman *et al.* 2004). Of the 50 mothers who had experienced depression, none were currently depressed. Of the 40 fathers who had experienced depression, 33 fathers had past depression and 7 were currently depressed. At Time 2, 106 fathers and 98 mothers participated (66% response rate). There were no significant differences between parents who did and did not drop out between assessments in baseline depressive symptoms, reflection, brooding ($p > .12$). At the first assessment, mean age for fathers and mothers was 38.8 (SD = 0.6) and 36.4 (SD = 0.5) years respectively. Most couples were married (95%), White British (95%) and had a postgraduate degree (31% of fathers and 29% of mothers). Children's mean age was 3.9 years (SD = 0.8) and 47% were boys.

Measures

Parents' rumination: Brooding and reflection.

Parents' trait rumination in response to sad mood was measured using the Ruminative Response Scale (RRS; Treynor *et al.* 2003). The RRS is a self-report questionnaire that contains within it brooding (5 items) and reflection subscales (5 items) with content that is relatively uncontaminated with depressive symptoms. Brooding is defined as a self-evaluative, negatively-toned ruminative response and reflection as a more

neutral, analytic ruminative response to sad mood (Treynor *et al.* 2003). Evidence suggests that brooding is distinct from self-criticism and perfectionism (Blankstein & Lumley, 2008; O'Connor, & Noyce, 2008; Olson & Kwon, 2008; Stange et al., 2015). Items are rated on a 4-point scale from 1 = *Almost never* to 4 = *Almost always*. Higher scores indicate higher levels of rumination for each respective scale. In this study, the internal consistency of each scale at Time 1 was satisfactory for both mothers (brooding α =.86; reflection α =.82) and fathers (brooding α =.81; reflection α =.72).

Parents' depressive symptoms.

Parents' current depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke, & Williams, 1999). The PHQ-9 is a self-report questionnaire consisting of nine items, each rated on a 4-point scale ranging from 0 = *Not at all* to 3 = *Nearly every day*. Higher scores indicate higher levels of current depressive symptoms. Internal consistency for the sample at Time 1 was high for both mothers (α = .83) and fathers (α = .85).

Parents' couple relationship.

Parents' couple relationship was measured using the Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS consists of 32 items and a total score is created by summing scores on the items. Higher scores indicate a better couple relationship. In this study, internal consistency at Time 1 was high for both mothers (α = .91) and fathers (α = .92). There were significant correlations between mothers' and fathers' total DAS scores at Time 1 (r = .53, p < .01), indicating high levels of agreement about relationship quality. To reduce the number of analyses, mothers' and fathers' total DAS scores were therefore averaged at Time 1 for all analyses.

Child internalising (emotional) symptoms.

Children's emotional symptoms were measured using the internalising scale of the Child Behavior Checklist for ages 1½ to 5 (Achenbach & Rescorla, 2000) at Time 1. At Time 2, the internalising scale of the Child Behavior Checklist for ages 6 to 18 years was used for older children (6 years and above) and the Child Behavior Checklist for ages 1½ to 5 was used for younger children. We averaged mothers' and fathers' CBCL (1½ to 5 years) internalising scale scores at Time 1. To enable comparison of scores regardless of which scale parents completed at Time 2, we standardised scores as follows. For those parents who completed the *younger* version of the CBCL at Time 2, we converted each parent's Time 2 CBCL score into a *z*-score (one within mothers, one within fathers) that we then averaged across parents of each child. Separately, for those parents who completed the *older* (6 to 18 years) version of the CBCL at Time 2, we converted each parent's Time 2 CBCL score into a *z*-score (one for mothers, one for fathers) that we then averaged across parents of each child. For each child, the corresponding mean *z*-score at Time 2 was analysed as the outcome variable. This procedure eliminated variability associated with parental completion of different versions of the CBCL at Time 2.

Statistical analysis

After using bivariate correlations to test associations among variables, hierarchical regressions were conducted to examine the relationship between mothers' and fathers' brooding (predictors) and child emotional symptoms (outcomes) longitudinally. In order to conduct a conservative test of our hypotheses, we entered children's emotional symptoms at Time 1 and couple relationship into the first step of the regression model with mothers' depressive symptoms and mothers' reflection. We added mothers' brooding in a second step to test our hypothesis that it would significantly predict children's emotional symptoms. In the third step, we added fathers' depressive symptoms and father's reflection, and in the final step we added fathers' brooding, to investigate whether it was an independent predictor of children's emotional symptoms

after controlling for covariates and maternal variables. The sample size resulted in adequate statistical power to detect medium-sized effects (Cohen, 1992). We also re-ran the hierarchical regressions replacing mothers' and fathers' PHQ-9 scores with a SCID (research version) diagnosis of depression (dummy-coded: 0 = controls; 1 = depressed). This analysis was conducted to examine whether mothers' and fathers' brooding would predict children's emotional symptoms when controlling for whether parents met diagnostic criteria for a depressive episode.

Results

Table 1 provides descriptive statistics for study variables.

[Insert Table 1 here]

Correlations among study variables are presented in Table 2. Mothers' brooding correlated with all study variables in the expected direction while mothers' reflection correlated positively with mothers' depressive symptoms, fathers' brooding, and children's emotional symptoms at both time points. Mothers' depressive symptoms correlated positively with fathers' depressive symptoms and child emotional symptoms (at Times 1 and 2) and correlated negatively with couple adjustment. For fathers, all correlations were significant in the expected direction except for a non-significant correlation between fathers' depressive symptoms and children's emotional symptoms (Time 1). There was a negative correlation between couple adjustment and children's emotional symptoms (at Times 1 and 2). Children's emotional symptoms were positively correlated across time points.

[Insert Table 2 here]

To test our hypotheses, we constructed a hierarchical regression model in which child emotional symptoms at Time 2 were regressed on child emotional symptoms, couple adjustment, mothers' depressive symptoms and reflection at Time 1 in the first step, before mothers' brooding was added in the second step

to test the first hypothesis, fathers' depressive symptoms and reflection at baseline were then added in the third step, before fathers' brooding was added to the model in the fourth step to test the second hypothesis.

As shown in Table 3, variables entered into the model in Step 1 explained almost half of the variance in child emotional symptoms at Time 2, although only child emotional symptoms at Time 1 was a significant predictor. Couple adjustment, mothers' depressive symptoms and mothers' reflection at Time 1 did not significantly predict child emotional symptoms at Time 2. Failing to support our first hypothesis, when entered in Step 2, mothers' brooding at Time 1 did not explain significant additional variance in child emotional symptoms at Time 2. The entry of fathers' depressive symptoms and reflection in Step 3 did not significantly improve the model, with neither variable explaining child emotional symptoms at Time 2. However, supporting our second hypothesis, fathers' brooding at Time 1 explained a significant additional 3% of variance in child emotional symptoms at Time 2. In this final step of the model, child emotional symptoms at Time 1 remained the only other significant predictor of child emotional outcomes at Time 2.

[Insert Table 3 here]

When we replaced parental depressive symptoms with categorical variables representing SCID diagnosis of depression, fathers' brooding remained a significant predictor of child emotional symptoms at Time 2 (β = .25, p = .03), after controlling for all confounders.

Discussion

This was the first study to examine the unique role of mothers' and fathers' rumination in predicting child emotional symptoms. We found significant positive cross-sectional associations between parents' brooding and reflection and child emotional symptoms. Interestingly, fathers' brooding, but not mothers' brooding, significantly predicted child emotional symptoms over time after controlling for important confounders-including current depressive symptoms-that have been consistently associated with rumination (Nolen-Hoeksema *et al.* 2008; Watkins, 2008). Consistent with our second (but not our first) hypothesis, the association between parental rumination and child emotional symptoms was specific to fathers' brooding.

Although the effects were small in terms of proportion of variance explained, the analyses were conservative because we controlled for child emotional symptoms at baseline, couple relationship, depressive symptoms and brooding/reflection in mothers. The time interval between Time 1 and 2 was also substantial (16 months). In terms of distinctions between components of rumination, the study provided no support for the role of parents' reflection in predicting child outcomes. This is consistent with Burwell and Shirk's (2007) finding that brooding (but not reflection) is uniquely maladaptive over the long term (see also Treynor *et al*. 2003).

Contrary to our predictions, mothers' brooding did not predict children's emotional symptoms. Whether fathers' and mothers' rumination have distinct influences on children's emotional symptoms is an important topic for future research. Should the findings of the study be replicated in future research, an interesting question will be to examine why fathers' brooding predicts emotional difficulties in their children. Brooding is a passive and self-evaluative response style to sad mood that does not involve active problem-solving (Treynor *et al*. 2003). Fathers who brood may have a submissive interpersonal style and tend to behave in a compliant, non-assertive, inhibited and withdrawn manner (Cheung, Gilbert, & Irons, 2004; Pearson, Watkins, Mullan, & Moberly, 2010). They may engage in frequent social comparisons and their submissiveness may reflect a sense of inferiority when they compare themselves to others (Cheung, Gilbert, & Irons, 2004; Gilbert, 2000; Price, Sloman, Gardner, Gilbert, & Rohde, 1994). These behaviours may not fit in with the traditional Western father role model that emphasises independence and the handling of challenges (Paquette, 2004). Children may observe and model their fathers' withdrawn and submissive behaviours and/or they may show emotional difficulties because of the impact of fathers' brooding on father-child interactions. In contrast, the traditional Western mother role model emphasises the mother-child emotional bond (Paquette, 2004). Perhaps mothers' more introspective behaviours may have less influence on their children's emotional outcomes and this might explain why the study found no significant effects for mothers. However, these suggestions are only tentative and future research needs to examine similarities and differences in the effects of mothers' and fathers' rumination on child emotional outcomes. Another

interesting direction for future research is to examine whether the impact of parent's brooding on emotional symptoms differs in boys and girls.

Across parents, brooding was consistently correlated with poor marital adjustment while only fathers' reflection was correlated with couple adjustment. These findings are consistent with previous studies showing that ruminative thinking predicts a more deleterious marital relationship, through increasing preoccupation on the self while reducing sensitivity to the marital partner (Kachadourian, Fincham, & Davila, 2005; Paleari, Regalia, & Fincham, 2005; Watkins, 2008). Previous studies have shown brooding to be associated with rejection sensitivity and a submissive interpersonal style, independent of depressive symptoms (Pearson *et al.* 2010), which may reduce relationship quality. Furthermore, consistent with previous research (Rehman *et al.* 2008), the study provided support for a positive association between depressive symptoms and marital problems. However, it is notable that couple adjustment did not predict child emotional symptoms when depressive symptoms were controlled, suggesting that any relationship between couple adjustment and child outcomes may not be independent of depressive symptoms.

The study had several limitations. The sample of depressed parents was relatively small and the majority of parents were highly educated and therefore the findings might not generalise to other populations. The study relied on self-reports and therefore the data are subject to shared method variance, which may have artificially inflated associations between parent and child outcomes. The study's attrition rate was 34% and, although there were no significant differences in important characteristics between the group of parents who participated in both assessment points and the group of parents who dropped out, the findings should be interpreted with caution. Another limitation is that none of the mothers were currently depressed, which limits generalisability. Whilst rumination may be prevalent even when parents exhibit low levels of depressive symptomatology (DeJong *et al.* 2016), it is plausible that rumination might be more persistent and intense among mothers with a current diagnosis of depression such that it puts their children at greater risk for emotional difficulties. Therefore this study's findings for mothers should be generalised to other populations with caution. It is worth mentioning that although the study revealed significant associations between fathers' brooding and children's emotional symptoms, the means on the RSS and

CBCL were relatively low. Perhaps these associations would be stronger in populations with higher scores on these measures. Finally, while the study assumed parent-to-child transmission of risk it is also likely that children's emotional difficulties can lead to increases in fathers' brooding and depressive symptoms.

Despite these limitations, the study benefitted from a longitudinal design with a 16 month follow-up period using data on depressive symptoms and rumination from both parents. The study provides novel findings on the role of fathers' brooding in young children's emotional symptoms and has important theoretical and clinical implications. Theoretically, the findings supplement the model developed by DeJong and colleagues and extend it to fathers. Although the role of fathers has been neglected in previous research, our findings indicate that fathers contribute to child outcomes over and above the role of mothers. Theoretically, if the findings of this study are replicated, future research should uncover the mechanisms by which rumination exerts its risk to chid development. DeJong *et al.* (2016) developed a testable theoretical model of the effects of rumination on maternal sensitivity during mother-infant interactions. Other environmental pathways by which parental rumination exerts its adverse effects on children's outcomes across different age groups would be a fruitful area of research. Other possibilities include transmission of maladaptive affect (e.g., sadness, shame, guilt), cognitions (e.g., criticism) and behaviours (e.g., submissiveness) via parenting and family conversations in daily life. Clinically, the existing literature suggests that rumination might be a promising target for both prevention and intervention strategies. In a review paper, Topper, Emmelkamp, and Ehring (2010) emphasised the role of rumination in preventive interventions for depression and anxiety and indicated that interventions that target rumination (e.g., behavioural activation, mindfulness) may result in decreases in symptoms of depression and anxiety. Although this longitudinal study could only support a directional relationship between fathers' brooding and poorer subsequent child emotional symptoms, increasing evidence for a causal relationship between parental rumination and child outcomes could inform parenting interventions (e.g., educate parents about the possible effects of rumination on family interactions and children's outcomes, help parents notice when they ruminate, teach them to replace rumination with more adaptive strategies). Parenting interventions that aim to reduce fathers' brooding may benefit fathers' mental health as well as their children's emotional

outcomes. If there are resources to support fathers and their children, one suggestion would be to screen for fathers' brooding when their children have increased emotional symptoms and vice versa. Another direction for future research is to examine if fathers who take part in parenting interventions brood over parenting difficulties and whether brooding impacts upon the effectiveness of parenting programmes. It would also be interesting to examine whether decreases in parental rumination (particularly brooding) following intervention are associated with improved couple interactions and if the effects are equally evident in both men and women.

Conflict of interests None.

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Table 1: Descriptive statistics for study variables

	Mothers			Fathers		
	N	Range	*M* (*SD*)	*N*	Range	*M* (*SD*)
Brooding rumination Time 1	141	5-19	9.34 (3.50)	149	5-19	8.99 (3.18)
Reflective rumination Time 1	141	5-20	9.14 (3.38)	149	5-16	8.58 (2.79)
Depressive symptoms Time 1	144	0-20	3.06 (3.55)	157	0-21	3.69 (4.44)
Couple adjustment Time 1	141	74-150	116.95 (12.56)	152	69-144	115.11 (14.08)
Children's emotional symptoms Time 1 (CBCL 1½ - 5)	141	0-30	6.98 (5.64)	149	0-36	6.96 (5.98)
Children's emotional symptoms Time 2 (CBCL 1½ - 5)	63	0-26	6.03 (5.83)	69	0-23	5.84 (4.78)
Children's emotional symptoms Time 2 (CBCL 6-18)	29	0-10	4.00 (2.98)	29	0-13	3.45 (3.55)

Table 2: Correlations among study variables for mothers and fathers

Variables	1	2	3	4	5	6	7	8	9
1 Mothers' brooding rumination Time 1									
2 Mothers' reflective rumination Time 1	.58***								
3 Mothers' depressive symptoms Time 1	.53***	.31***							
4 Fathers' brooding rumination Time 1	.26**	.23**	.16						
5 Fathers' reflective rumination Time 1	.18*	.15	.09	.54***					
6 Fathers' depressive symptoms Time 1	.20*	.16	.20*	.51***	.25**				
7 Couple adjustment Time 1	-.18*	-.12	-.21*	-.44***	-.35***	-.34***			
8 Children's emotional symptoms Time 1	.25**	.28**	.25**	.24**	.30***	.13	-.26**		
9 Children's emotional symptoms Time 2	.24*	.24*	.22*	.43***	.23*	.23*	-.22*	.65***	

Note[1]: Mothers' and fathers' couple adjustment and children's emotional symptoms are averaged across parents
Note[2]: * $p < .05$; ** $p < .01$; ***$p < .001$

Table 3: Hierarchical regressions showing the longitudinal associations of parents' brooding and reflective rumination with child emotional outcomes when controlling for parents' depressive symptoms, couple relationship and child emotional outcomes at Time 1

		Children's emotional symptoms Time 2			
	N	ΔR^2	*B*	*SE(B)*	β
Step 1					
Children's emotional symptoms Time 1	81	.45***	.11	.02	.59***
Couple adjustment Time 1			-.005	.008	-.07
Mothers' depressive symptoms Time 1			.02	.03	.09
Mothers' reflective rumination Time 1			.03	.02	.11
Step 2					
Children emotional symptoms Time 1		.003	.11	.02	.61***
Couple adjustment Time 1			-.005	.008	-.06
Mothers' depressive symptoms Time 1			.03	.03	.11
Mothers' reflective rumination Time 1			.04	.03	.14
Mothers' brooding rumination Time 1			-.02	.03	-.07
Step 3					
Children emotional symptoms Time 1		.02	.11	.02	.60***

Couple adjustment Time 1		-.001	.008	-.01
Mothers' depressive symptoms Time 1		.03	.03	.10
Mothers' reflective rumination Time 1		.04	.03	.14
Mothers' brooding rumination Time 1		-.02	.03	-.07
Fathers' depressive symptoms Time 1		.03	.02	.14
Fathers' reflective rumination Time 1		.000	.03	-.001
Step 4				
Children emotional symptoms Time 1	.03*	.11	.02	.58***
Couple adjustment Time 1		.003	.008	.03
Mothers' depressive symptoms Time 1		.02	.03	.08
Mothers' reflective rumination Time 1		.04	.03	.14
Mothers' brooding rumination Time 1		-.02	.03	-.09
Fathers' depressive symptoms Time 1		.02	.02	.09
Fathers' reflective rumination Time 1		-.03	.03	-.10
Fathers' brooding rumination Time 1		.06	.03	.23*

Note[1]: Mothers' and fathers' couple adjustment and children's emotional symptoms are averaged across parents
Note[2]: *$p < .05$, *** $p < .001$
Note[3]: Listwise deletion resulted in a reduced sample size due to attrition and missing data across parents.